CIS 210 Fall 2018    Week 4 Review

```python
>>> isinstance(101, float) == True
??
```

```python
>>> isinstance(101, float)
??
```

Given the following Python code:

```python
>>> x = 'CIS 210'
>>> id(x)
4391509160
>>> y = x
>>> id(y)
??-1
>>> x = 'the end'
>>> id(x)
??-2
>>> y
??-3
```

4391509160 refers to a(n)

a) assignment statement   b) function   c) None type   d) keyword   e) memory location

The value printed at ??-1 will also be 4391509160 (yes or no); the value printed at ??-2 will also be 4391509160 (yes or no).

a) yes/yes   b) no/no   c) yes/no   d) no/yes

The value printed at ??-3 will be

a) 4391509160   b) 'CIS 210'   c) 'the end'   d) None

The following Python code

```python
>>> x = 'hi'
>>> x = 0
>>> x = x < 0
```

is an example of what feature of Python?

a) strong typing   b) dynamic typing   c) operator overloading
d) loops   e) conditionals
The following Python code

```python
>>> x = 'hi' + '-' + 'bye'
```

```python
>>> y = 99 + 100
```

demonstrates what feature of Python?

- a) strong typing
- b) dynamic typing
- c) operator overloading
- d) weak typing
- e) static typing

The following Python code

```python
>>> x = 'hi' + 99
```

Traceback (most recent call last):
  File "<pyshell#41>", line 1, in <module>
    x = 'hi' + 99
TypeError: must be str, not int

is an example of what feature of Python?

- a) strong typing
- b) dynamic typing
- c) operator overloading
- d) weak typing
- e) static typing

What will be printed when the following Python code is executed?

```python
n = 5
mysum = 0
for ctr in range(1, n):
    myctr = mysum + ctr

print(mysum)
```

??

This code does not work as intended. This bug may be attributed to Python’s

- a) strong typing
- b) dynamic typing
- c) operator overloading
- d) weak typing
- e) static typing

What will be printed when the following Python code is executed?

```python
n = 5
mysum = 0
for ctr in range(1, n):
    mysum = mysum + ctr

print(mysum)
```

??

This code is an example of

- a) accumulator pattern
- b) TypeError
- c) conditional
- d) indefinite iteration
- e) infinite loop
Given the following Python code:

```python
import math

def isInCircle(x, y, r):
    '''(number, number, number) -> ??

    Returns True if point (x, y) is in the circle with radius r.
    >>> isInCircle(0, 0, 1)
    True
    >>> isInCircle(.5, .5, 1)
    True
    >>> isInCircle(1, 2, 1)
    False
    
    d = math.sqrt(x**2 + y**2)
    isIn = d <= r
    return isIn

    Complete the type contract: ??
    Which code would give the same results as isInCircle lines 12-14 (changes are in bold)?

a) d = math.sqrt(x**2 + y**2)
   return d = r

b) d = math.sqrt(pow(x, 2) + pow(y, 2))
   return d <= r

c) d = math.sqrt(x**2 + y**2)
   return d < r

d) d = math.sqrt(pow(x, 2) + pow(y, 2))
   isIn = d < r
   return isIn

e) d = math.sqrt(x**2 + y**2)
   return d
```

Given the following Python code:

```python
1 - >>> ftemp = 212
2 - >>> ctemp = (ftemp - 32) * 5/9
3 - >>> ctemp = ftemp - 32 * 5/9

The value of ctemp will [??] from line 2 to line 3; the type of ctemp will [??] from line 2 to line 3

a) stay the same/change           b) change/stay the same            c) stay the same/stay the same
d) change/change
Given the following Python code:

def q24(s):
    '''
    (??) -> ??
    Test function.
    >>> q24('The quick brown fox')
    ??
    >>> q24('Hello, world.')
    ??
    '''
    result = 999
    for i in range(len(s)):
        if s[i] == 'E' or s[i] == 'e':
            result = i
    return result

q24('Hello')

Complete the type contract for q24:

Executing this function will

a) Return the number of occurrences of 'e' in s, or 999 if none.
b) Return the number of occurrences of 'E' in s, or 999 if none.
c) Return the sum of a) and b), or 999 if none.
d) Return the position of the first occurrence of 'e' or 'E' in s, or 999 if none.
e) Return the position of the last occurrence of 'e' or 'E' in s, or 999 if none.

The first time the for loop executes, the value of i is

a) 'H'        b) 0        c) 1        d) 4        e) 5

The first time the for loop executes, the value of s[i] == 'E' or s[i] == 'e' is

a) 'E'        b) 'e'       c)True      d)False      e) 'False'

To determine this value, Python evaluated

a) b) c) d)
s[i] == 'E'  s[i] == 'E'  s[i] == 'e'  result += 1
s[i] == 'e'
Given the following Python code:

```python
def q29(s1):
    """(str) -> str
    ""
    s2 = ''
    for ch in s1:
        if ch not in s2:
            s2 += ch
    return s2
```

Which brief description is appropriate for `q29`?

a) copies `s1` to `s2`; returns `s2`
b) copies all characters except the last character in `s1` to `s2`; returns `s2`
c) copies 1st occurrence of each character in `s1` to `s2`; returns `s2`
d) determines whether `s1` is an empty string
e) creates and returns `s2`, a string of the characters that repeat (occur more than once) in `s1`

Given the following Python code:

```python
def q30(score):
    """ exam function ""
    gradepoint = 0
    if score >= 90:
        gradepoint = 4
    elif score >= 80:
        gradepoint = 3
    elif score >= 70:
        gradepoint = 2
    elif score >= 60:
        gradepoint = 1
    return gradepoint
```

What is the result of executing `>>> q30(80)`?

a) 4  b) 3  c) 2  d) 1  e) NameError
Given the following UNTESTED Python code:

def q3(myStr):
    '''final exam function'''
    newStr = ''
    for ch in myStr:
        if ch not in newStr:
            newStr += ch
    return newStr

What will be the result of executing

```python
>>> q3('abab')
```

a) 'abab'  
b) 'ab'  
c) 'ba'  
d) 'a'  
e) 'b'

Given the following Python code:

```python
1   def isOdd(i):
2       '''(int) -> bool
3       exercise
4       '''
5       return i % 2 != 0
6
7   def q8(msg):
8       '''(str) -> ??
9       exercise
10      '''
11      odd_ct = 0
12      for ch in msg:
13          if isOdd(int(ch)):
14              odd_ct += 1
15      return odd_ct
16
17   def main():
18       '''exercise'''
19
20   code = '001100001100'
21   print(q8(code))
22   return None

Complete the type contract for q8:

??

What will be the result of executing

```python
>>> main()
```
What would be the result of executing

\texttt{print(msg)} between lines 12 and 13?

a) \textbf{NameError}          b) 0          c) '001100001100'          d) \textbf{str}

\texttt{print(ch)} between lines 14 and 15 the first time the for loop is executed?

a) '0'          b) '1'          c) 'm'          d) 0          e) 1

\texttt{print(i)} between lines 5 and 6 the first time \texttt{isOdd} is executed?

a) '0'          b) '1'          c) 'm'          d) 0          e) 1

\texttt{print(odd\_ct)} between lines 5 and 6 the first time \texttt{isOdd} is executed?

a) '0'          b) '1'          c) \textbf{NameError}          d) 0          e) 1

\texttt{print(code)} between lines 24 and 25 when \texttt{main} is executed?

a) 0          b) 4          c) 8          d) \textbf{NameError}          e) '001100001100'

\texttt{print(msg)} between lines 24 and 25 when \texttt{main} is executed?

a) 0          b) 4          c) 8          d) \textbf{NameError}          e) '001100001100'

While function \texttt{q8} is executing, \texttt{odd\_ct} exists in a/the _____ namespace.

a) \textbf{local}          b) \textbf{global ('\_\_main\_\_')}          c) \textbf{built-in}

Functions \texttt{main}, \texttt{q8}, and \texttt{isOdd} exist in a/the _____ namespace.

a) \textbf{local}          b) \textbf{global ('\_\_main\_\_')}          c) \textbf{built-in}

The decimal representation of binary 1111 is ??

The binary representation of decimal 24 is ??

Practice (re-)writing any of the code from projects so far. Code should be very similar to posted solutions.